Status of E-906/SeaQuest

– an unpolarized fixed-target Drell-Yan experiment

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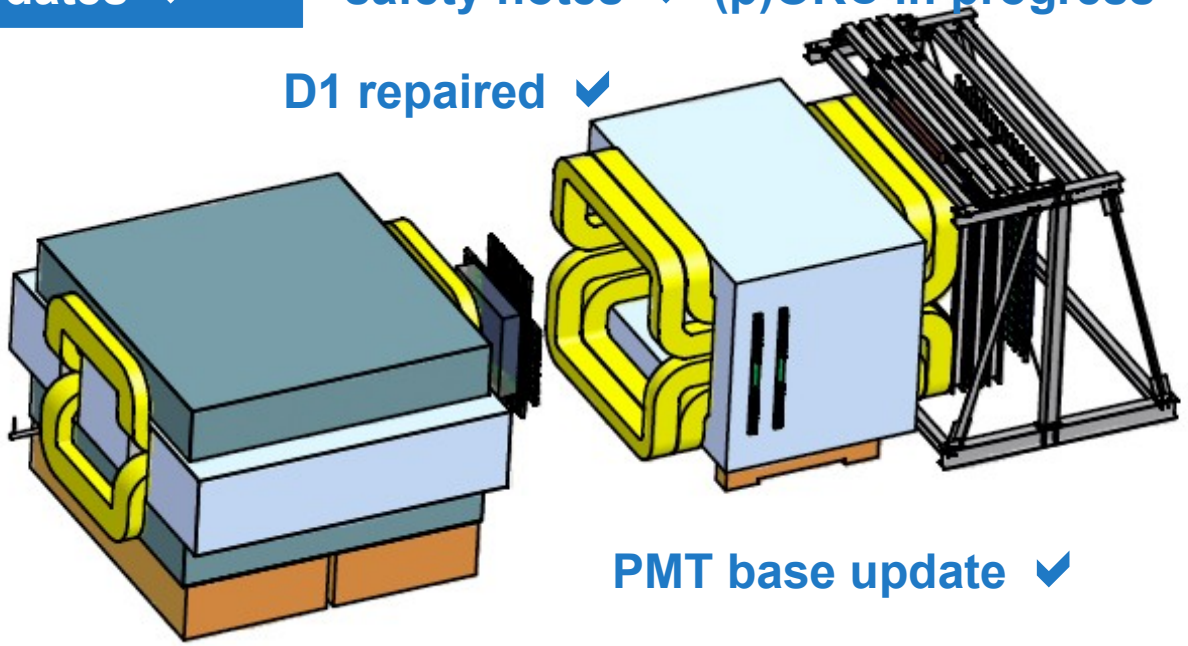
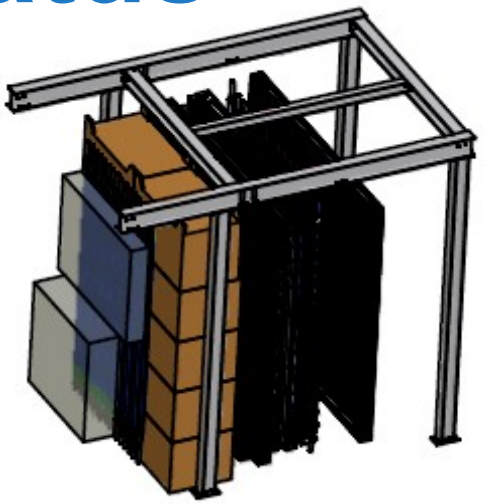
Spectrometer Status

Updates ✔ safety notes ✔ (p)ORC in progress

D1 repaired ✔





D3m installed ✔

PMT base update ✔

new D1 built at CU-Boulder

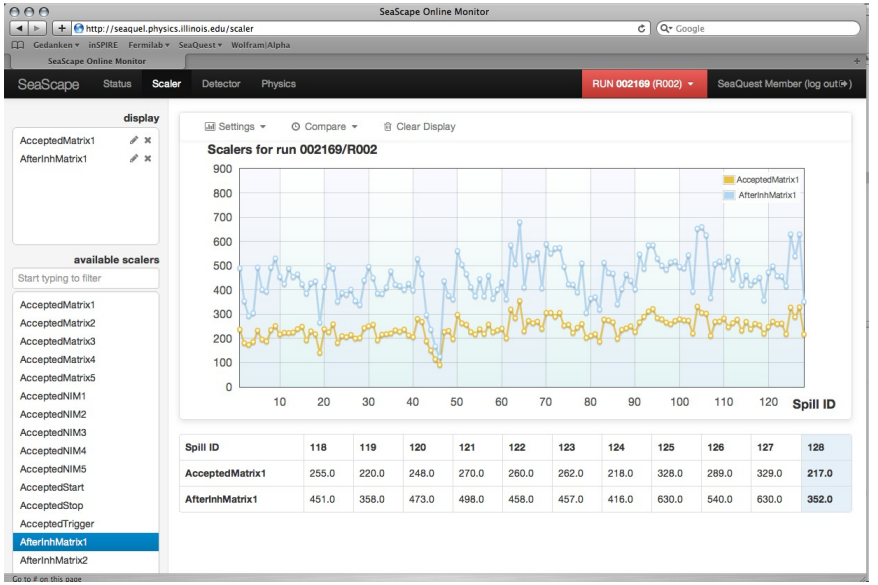
Target ✔	D2 cooldown test last week ✔ , **operational**
Magnets	scheduling of test of power supplies (NM3S, NM4AN) and interlocks
Hodoscopes ✔	**operational**, calibrated with cosmics; **ToDo:** mapping test, survey
Drift Chambers ✔	proportional tubes repaired (dead module, oscillations, HV problem), **operational**, HV training, test of mapping (wire → ASDQ / LSB → TDC) and survey in process; **ToDo:** HV training for D1 (+1450V → +1.5kV) and D2 (-1.8kV → -1925V), mapping test for D3m, survey for D2, change gas adiabatically from Ar:CO_2 to P08:CF_4

DAQ / Trigger Status

- custom-made high-rate **TDCs installed and well tested**
- L(evel)0, L(evel)1, and L(evel)2 **trigger modules installed and operational**
- comprehensive **test of trigger firmware** almost completed:
  - required speeding up the LVL2 clock period (16ns → 15.8ns) to avoid LVL1 and LVL2 internal clocks to be aligned (caused 0.08% of the signals to be missed)
  - 100.0% purity and 100.0% efficiency found in road pulser tests
- **trigger road selection** optimized for:
  - good DAQ livetime
  - good acceptance rate of Drell-Yan events
  - **ToDo:** restructure trigger firmware, study effects on Drell-Yan acceptance
- **NIM / FPGA trigger comparison:**
  - NIM clone logic implemented
  - **ToDo:** add NIM clone logic in main firmware

Software / Analysis Status

- ongoing **decoder cross check**
- new mapping file completed
- **online monitoring** in progress:
  - test online decoding and tracking
  - adding modules to SeaScape
  - use onsite MySQL / web servers
- **tracker comparison** in progress:
  - jTrack and kTrack use common track-finding strategies that emerged from Run I analysis
  - different approaches for vertex finding
  - improved tracking efficiencies



Beam status

- **Main Injector slow-spill extraction:**
  - repair of MI-52 septa tank B (resistors replaced)
- **Status of external beamline for SeaQuest:**
  - successful test of all safety systems
  - installation of all G2 and NM1 magnets
  - **beam-line Cerenkov counter installed**

    → improved beam diagnostics, bucket by bucket intensity measurement
  - **ToDo:**
    - vacuum checking for G2
    - installation and alignment of box SWIC in NM1
    - pump-down of berm pipe, very soon / perhaps today
    - finalize **read-out board for beam-line Cerenkov counter**

The E-906/SeaQuest collaboration is looking forward to the commissioning and data taking with the 120 GeV proton beam with a high duty factor!